

## Safety Data Sheet

### 29 CFR 1910.1200

#### Section 1: Company and Product Identification

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**Product Name:** Tetraamminepalladium (II) Nitrate Solution

**Product Code:** 5018-S

**Company:** Colonial Metals, Inc.  
 Building 20  
 505 Blue Ball Road  
 Elkton, MD 21921 United States  
 Company Contact: EHS Director  
 Telephone Number: 410-398-7200  
 FAX Number: 410-398-2918  
 E-Mail : info@colonialmetals.com  
 Web Site: www.colonialmetals.com



www.colonialmetals.com

**Emergency Response:** Supplier Emergency Contacts & Phone Number  
 Chemtrec: 800-424-9300  
 World Wide - Call COLLECT to U.S: 703-527-3887

#### Section 2: Hazards Identification

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GHS05

GHS03

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**Hazard Pictograms:**



**Signal Word:** Danger

**Hazard Category:** Skin corrosion/irritation Cat 1  
 Serious eye damage/eye irritation Cat 1  
 Specific target organ tox, single exp. Cat 3 (resp irrit)  
 Acute tox, inh. Cat 4  
 Explosives Div 1.5 (may mass explode hazard)

**Hazard Statements:** H314: Causes severe skin burns and eye damage  
 H318: Causes serious eye damage  
 H335: May cause respiratory irritation  
 H332: Harmful if inhaled  
 H205: May mass explode in fire

**Precautionary Statements:** P202: Do not handle until all safety precautions have been read and understood  
 P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
 P264: Wash thoroughly after handling  
 P280: Wear protective gloves/protective clothing/eye protection/face protection  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  
 P402+404: Store in a dry place. Store in a closed container  
 P501: Dispose of contents/container in accordance with local/national/international rules.

**Hazards not otherwise classified:**

Conditions Aggravated By Exposure:

May cause irritation of the respiratory system. Exposure to nitric acid causes tissue corrosion from topical contact and acute pulmonary edema or chronic obstructive pulmonary disease from inhalation.

Oxidizing. Irritant.

Explosive when dry.

Contact with combustible material may cause fire.

To the best of our knowledge the chemical, physical, and toxicological properties of this compound have not been thoroughly investigated.

**Section 3: Composition / Information on Ingredients**

Hazardous substance (name)	Hazard Category	CAS#	Weight %
Ammonia Hydroxide		1336-21-6	0-5
Ammonium Nitrate		6468-52-2	0-51
Tetraammine Palladium (II)		13601-08-6	0-5
<b>Chemical Name:</b> Tetraammine Palladous Nitrate Solution			
<b>CAS Number:</b> 13601-08-6			
<b>Chemical Family:</b> Platinum Group Metal Salts			
<b>Chemical Formula:</b> (NH <sub>3</sub> ) <sub>4</sub> Pd(NO <sub>3</sub> ) <sub>2</sub>			

**Section 4: First Aid Measures**

**General Info:** Ensure proper ventilation.

**Notable Exposure symptoms:** Irritation to skin, eyes and areas of contact.

**symptoms:**

**If ingested:** Rinse mouth. Seek immediate medical attention. Clear the airway and administer artificial respiration if not breathing.

If swallowed, do not induce vomiting unless directed to do so by medical personnel.

**If inhaled:** Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim if possible. Get medical attention immediately.

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention immediately.

**Skin contact:** Take off immediately all contaminated clothing. Rinse with water thoroughly. Get medical attention immediately.

**Additional Info:** Observe for any symptoms for several hours after exposure. Ingestion Hazards: Irritation; burning pain in the mouth, throat, stomach, thorax; coughing followed by vomiting or diarrhea.

Inhalation Hazards: Irritation to the upper respiratory tract and mucous membranes; possible convulsions or shock.

**Section 5: Fire Fighting Measures**

**General Info:** Use proper safety equipment. This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can decompose to emit fumes under fire conditions

**Extinguishing** Use water spray.

**Method / Equipment:**

**Hazardous Fire And Explosion Hazards:**

**Decomposition Info:** Dry material explodes when heated.

May be shock sensitive if dry.

May accelerate combustion.

Emits toxic fumes under fire conditions.

**Section 6: Accidental Release Measures**

**Personal precautions, protective equipment and procedures:** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing dust. Ventilate area if easy to do so. Contact local authorities if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Containment Equipment and Procedures:** **Spills:** Contain actively spilling material if safe and easy to do so, avoid generating dust. Have emergency response team respond. Neutralize with dilute HCL solution. Cover with dry-lime, sand, or soda ash and sweep or soak up and place in sealed container using non-sparking tools. Person protected with full face shield and proper respirator for ammonia vapor. Ventilate area and wash spill site after pick up is complete.

**Cleanup Procedures:** Collect all contaminated media, or other cleanup materials into a waste receptacle. If cleaning surface is necessary, utilize vacuum cleaner, provided adequate ventilation is available.

## Section 7: Handling and Storage

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**Safe Handling** Do not handle until all safety precautions have been read and understood. Keep containers tightly

**Precautions:** closed Ensure adequate ventilation. Avoid breathing dust/vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling.

**Recommendations for Storage:** Store in cool, dry area in a tightly closed product container away from combustible material.

**Incompatibilities:** Store away from strong acids or oxidizing agents. Refer to Section 10.

**Other Precautions:** 0.01 ppm high efficiency particular respirator/supplied air respirator/self-contained breathing apparatus; 0.2 ppm same as above with full face piece; 1 ppm powdered air purifying respirator with high efficiency filter/type C supplied air respirator operated in pressure demand mode. Store in a sealed container, plastic or plastic liner, in a cool, well ventilated, dry area away from volatile acids.

## Section 8: Exposure Control / Personal Protection

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**General / Engineering Ventilation:** Local Exhaust: Required in handling area

**Controls:** Mechanical: Desirable to insure concentration of material below TLV/TWA levels  
Other: Closed Ventilation system with corrosive-resistant materials  
Safety shower and eyewash

**Work Clothing:** Protective work clothing which covers skin and prevents exposures.

**Eye/face protection:** Wear safety glasses with side shields or goggles with full face shield.

**Skin Protection:** Wear chemical resistant gloves.

**Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle

respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Additional Information:** Lab coat/apron, flame and chemical resistant protective clothing, eye wash, safety shower, and hygiene facilities for washing.

## Section 9: Physical and Chemical Properties

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<b>State:</b> Liquid	<b>Melting Point:</b> N/A	<b>Freezing Point:</b> N/A
<b>Color:</b> Colorless to Light Yellow	<b>Boiling Point/Range:</b> 100 °C	<b>pH</b> 9.5-10
<b>Molecular Wt.</b> 298.53	<b>Odor:</b> Ammonia Odor	<b>Water Soluble Solubility:</b>
<b>Evaporation rate:</b> N/A	<b>Flash Point:</b> N/A	<b>Part. Coeff (n-octanol/water)</b> N/A
<b>Upper Flam Limits:</b> N/A	<b>Lower Flam Limits:</b> N/A	<b>Packing Density:</b> 1.03 g/cm <sup>3</sup>
<b>VOC Content (lbs/gal):</b> N/A	<b>Specific Gravity:</b> 2.01	<b>Autoignition Temp:</b> N/A

## Section 10: Stability and Reactivity

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**General:** This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization. Avoid open flame and ignition sources.

**Conditions To Avoid (Stability):** Heat, Flame

**Incompatible materials:** Strong reducing agents, organic materials, and finely powdered metals

**Decomposition products:** Nitrous oxides (NO<sub>x</sub>).

**Section 11: Toxicological Information**

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**General Information:** To the best of our knowledge the chemical, physical, and toxicological properties of this compound have not been thoroughly investigated.

**Toxicological Information (product):** Subchronic (Target Organ Effects)  
Blood. Central Nervous System.

**Likely Routes of Exposure:** Eye Contact  
Skin Contact  
Inhalation  
Ingestion - possible, but considered unlikely.

**Carcinogenicity or mutagenicity:** No data available

**Sensitization:** Product is not expected to be a sensitizer.

**Section 12: Ecological Information**

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**General information:** Product not tested.

**Aquatic toxicity:** No specific data available. Do not allow large quantities of product to reach water, ground water, water courses or sewer systems.

**Degradation / Mobility info:** No specific data available.

**Bioaccumulative potential:** No specific data available.

**Section 13: Disposal Information**

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**Product disposal:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.  
Consult Federal EPA, State and local regulations for proper disposal/recycle/reclamation

**Container disposal:** Treat empty containers with extra care. Consult waste contractor.

**Other considerations:** NOTE: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

**Section 14: Transport Information**

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**DOT:** Proper Shipping Name  
Corrosive liquid, acidic, inorganic, n.o.s.  
Hazard Class  
8  
DOT Identification Number  
3264  
DOT Shipping Label  
Corrosive  
Packaging Requirements  
PG II

**IMO/IMDG:** See regulation for information

**IATA:** Same as 49 CFR (DOT) regulation. Refer to IATA regulations for further shipping regulations.

**OTHER:** Inquire for further transport information.

**Section 15: Regulatory Information**

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**TSCA:** NL (Hazardous waste due to corrosivity)

**SARA Hazard Classes:** SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

**SARA 313:** THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS - NITRATE COMPOUNDS (WATER DISSOCIABLE).

**Canadian DSL:** This information and product has been classified in accordance with the hazard criteria of CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

**European Union (EU) Symbol of Danger:** O-Xi

**Regulatory**

**Information:** Indication of Danger: Oxidizing. Irritant.

**R:** 1-8-36/37/38

Risk Statements: Explosive when dry. Contact with combustible material may cause fire. Irritating to eyes, respiratory system and skin.

**S:** 17-26-36

Safety Statements: Keep away from combustible material. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

## Section 16: Other Information

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**NFPA Rating**

Health: 3

Fire: 0

Reactivity: 0

Other: COR

**HMIS Rating**

Health: 3

Fire: 0

Reactivity: 0

Personal

Protection: J

**Disclaimer:** In compliance with the OSHA Hazard communication Standard, 2.9 C.F.R 1910.1200, we are providing you with a Materials Safety Data Sheet (MSDS) for the hazardous material you are purchasing.

*It is your responsibility to educate your employees on the safe use of the hazardous material. With this in mind, a copy should be forwarded to the supervisor of the user or to the user themselves, and copy should be retained in your files for future reference.*

*Colonial Metals, Inc. makes no presentation as to the accuracy of the information in the MSDS. The information is believed to be correct; however, you (the customer), should perform your own investigation and independent verification. If you resell the product, you are responsible to forward the information in the MSDS to your customer.*

Colonial Metals, Inc.

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